Grade 8 Life Science
Project Based Learning

Building a Future in which People Live in Harmony with Nature

Introduction:

Students taught with dioramas were better in science learning skills than those taught with traditional learning method. Dioramas are used as teaching tools to provide opportunities for students to develop diorama making skills. Study revealed that students in the experimental group were significantly more successful than the students in the control group in term of the academic achievement. Similarly, students taught with dioramas were better in science learning skills than those taught with traditional learning method.

https://www.researchgate.net/publication/322308736_The_effects_of_using_diorama_on_7th_grade_students'_academic_achievement_and_science_learning_skills_The_effects_of_using_diorama_on_7th_grade_students'_academic_achievement_and_science_learning_skill

Standards included in this project:

Next Generation Science Standard:
3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

Writing:
CCSS.ELA-LITERACY.W.3.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
CCSS.ELA-LITERACY.W.3.2.A Introduce a topic and group related information together; include illustrations when useful to aiding comprehension.
CCSS.ELA-LITERACY.W.3.2.B Develop the topic with facts, definitions, and details.
CCSS.ELA-LITERACY.W.3.2.C Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories of information.
CCSS.ELA-LITERACY.W.3.2.D Provide a concluding statement or section.

Literacy:
Presentation of Knowledge and Ideas:
CCSS.ELA-LITERACY.SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

Objective/s:

1. Students will synthesize information through a 3D visual project.
2. Students will have the opportunity to develop knowledge and skills through engaging **projects** set around challenges and problems they may face in the real world.

Procedure:

PART 1: Research

1. Research one of the following topics (**maximum of 4 students**)

a) Green Power.
b) Rainwater Harvesting.
c) Energy Conservation.
d) Recycling.
e) Pollution.
f) Soil quality.
g) Greenhouse effect.
h) Climate change
i) Air Quality
j) Recycling
k) Renewable Energy
l) Water Purification
m) Save energy
n) Waste Management
o) Balanced Ecosystem
p) Habitat Model
q) Population Growth
r) Ecology
s) Organic Garden

2. Use the Rubric attached for the research contents

PART 2: Diorama

3. Create a nature diorama, display case, a miniature or a 3D replica to generate a natural or realistic view of your research.
4. Recycle paper materials such as magazines (for photos), popsicle sticks, toothpicks, glue, construction paper, and other craft items may be used. Creativity is encouraged!
5. Take pictures or add in real samples. Label them as accurately as you can
6. Use a good title to create representation of the scene.
7. Arrange all objects or models. Diorama: "a life-size, three-dimensional scene from nature"

HOW TO MAKE A DIORAMA

a) Find a box at least as big as _____ - a slightly larger box works even better.
b) Cover the outside of the box with construction paper.
c) Decide on a scale. This is key, because a diorama becomes believable to the extent that it looks "real." If you've got a focus (plastic animal), use that scale.
d) Collect your materials - animal figures, palm trees or cubes to build, for an interior scene.
e) Decide on a background - you can paint or draw your own or use wallpaper or wrapping paper (or anything else you can find). Remember, though, that the background images should be consistent with the scale you've chosen. Decorate the Walls: Most every diorama has three walls or views, a ceiling or sky and a floor, ground or base. You need to decorate these inside walls first. There are lots of ways to do this. You can paint them or color them with markers, crayons or paint. You can measure them, cut construction or other paper to fit on them, and glue that on. Or you can go to your computer and design something to look more realistic.
f) Build your diorama working from the back to the front - starts with the background (don't forget the sky/ceiling and ground/floor). Then place large objects such as trees. The smallest objects should go farthest forward. Use glue or putty to secure the objects. Objects such as birds, clouds, balloons, and airplanes can be hung from the top using black thread. Tape or tie the thread to the object and to the box.
g) Attach a title to the box where it can easily be seen.

8. Complete the requirements by Friday, **April 05, 2019**

PART 3: Presentation

The week of April 1-5 students will present their diorama to the class. The presentation should include:

1. The title of the miniature
2. One behavioral adaptation of an organisms in its environment
3. One structural adaptation of an organisms to survive in the environment from the diorama

Research Rubric

	50 WOW!	40 Almost perfect, just check the following items.	30 Needs a bit of work, check the following areas.	20 Oops! You really need to do some work on this in the following areas. See me.
Accuracy: How closely does your research represent the actual scene from the text? How accurately did you describe the scene in your paragraph?				
Completeness: Does your research look finished, or are there elements that are missing? Did you include one full paragraph explaining what the scene is and why you felt this scene was important?				
Creativity: Is your research unique (does it stand out)? Does it give a visually appealing write ups? Would it engage an audience?				
Effort: Does the work represent your best effort? Did you put time and thought into this project? Is everything neatly done? Did you check mechanics and grammar in your paragraph?				

Presentation Rubrics				
	50 WOW!	40 Almost perfect, just check the following items.	30 Needs a bit of work, check the following areas.	20 Oops! You really need to do some work on this in the following areas. See me.
Did you stand up straight, make eye contact with your audience, and speak loudly enough for everyone to hear?				
Were you informative, enthusiastic, and confident?				
How well did you answer your peers' questions?				
Did you respond appropriately to their comments?				

DIORAMA RUBRIC				
CATEGORY	**88-100**	**75-88**	**63-75**	**50-63**
Quality of Construction	The diorama shows considerable attention to construction. The items are neatly trimmed. All items are carefully and securely attached to the backing. There are no stray marks, smudges or glue stains. Nothing is hanging over the edges.	The diorama shows attention to construction. The items are neatly trimmed. All items are carefully and securely attached to the backing. A few barely noticeable stray marks, smudges or glue stains are present. Nothing is hanging over the edges.	The diorama shows some attention to construction. Most items are neatly trimmed. All items are securely attached to the backing. A few barely noticeable stray marks, smudges or glue stains are present. Nothing is hanging over the edges.	The diorama was put together sloppily. Items appear to be just "slapped on". Pieces may be loose or hanging over the edges. Smudges, stains, rips, uneven edges, and/or stray marks are evident.
Creativity	Several of the objects used in the diorama reflect an exceptional degree of student creativity in their creation and/or display	One or two of the objects used in the diorama reflect student creativity in their creation and/or display.	One or two objects were made or customized by the student, but the ideas were typical rather than creative (.e.g, apply the emboss filter to a drawing in Photoshop).	The student did not make or customize any of the items on the diorama.
Design	Objects are an appropriate size and interesting shape and are arranged well. Care has been taken to balance the diorama scene.	Objects are an appropriate size and interesting shape and are arranged well. The diorama, however does not appear balanced.	Objects are an appropriate size and shape, but the arrangement of items is not very attractive. It appears there was not a lot of planning of the item placement.	Objects are of an inappropriate size and/or shape. It appears little attention was given to designing the diorama.
Scene	The student gives an extensive explanation of how items in the diorama are related to the scene.	The student gives a reasonable explanation of how most items in the diorama are related to the scene.	The student gives a fair explanation of how most items in the diorama are related to the scene.	The student's explanations are weak & illustrate difficulty understanding how to relate items to the scene.